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SURVEY OF METALS AND OTHER ELEMENTS IN OFFAL AND OFFAL PRODUCTS

Summary

The Food Standards Agency (FSA) has conducted a survey of metals and other elements in offal and offal products. A total of 165 samples were analysed for aluminium, arsenic, cadmium, chromium, copper, iron, lead manganese, mercury, nickel, selenium, thallium and zinc.

The aim of this survey was to provide up-to-date information on the concentrations of metals and other elements in offal and offal products and to allow more accurate and detailed dietary intakes estimates of metals and other elements by consumers of offal and offal products. The samples were also analysed for dioxins and PCB and these results are reported separately.

The key facts of this survey are:

- **A total of 165 samples of offal and offal products were analysed for aluminium, arsenic, cadmium, chromium, copper, iron, lead manganese, mercury, nickel, selenium, thallium and zinc. Samples included 70 liver, 23 kidney, 21 pâté, 16 tongue, 8 heart, 8 black pudding, 7 haggis, and 12 other products such as tripe, sweetbread, chitterling and throatbread.**
- **Samples of offal and offal products were collected from a range of retail outlets including supermarkets, smaller shops and specialist retailers from across the UK. A total of 101 samples were collected in England, 28 in Scotland, 22 in Wales and 14 in Northern Ireland.**

- Elevated levels of copper and iron were found in some liver samples. However, estimated dietary exposure to these products does not raise concerns for consumers' safety.

Background

Inorganic environmental contaminants, such as heavy metals, are present in food adventitiously as a result of human activity or from natural sources. These contaminants may be introduced at any point along the food chain. In many cases, food is the main source of consumer exposure to inorganic contaminants, although other routes can also be significant, e.g., inhalation or drinking water. Metals tend to accumulate in animals' livers and kidneys, with the result being that these foods normally contain higher concentrations of these metals than other foods.

The offal food group is defined as the organs inside an animal, such as brain, kidney, liver, heart and tongue, which are often eaten as food. On average, offal is eaten in small quantities compared with other foods, and does not make a large contribution to average dietary intakes of metals in the population as a whole¹.

In the most recent of FSA's Total Diet Survey, the offal food group had the highest concentrations of copper, lead and selenium, and the second highest concentrations of cadmium and zinc. A previous survey of lead, cadmium, copper and zinc in offals was carried out by the Ministry of Agriculture, Fisheries and Food (MAFF) in 1998². All metal concentrations found were below legal limits for all samples. Legal limits have been lowered since this survey.

All samples were checked for compliance against limits laid down in the UK Arsenic in Food Regulations 1959 and Commission Regulation 466/2001 (as amended by Commission Regulation 221/2002) setting maximum levels for certain contaminants in foodstuffs³. These regulations set maximum limits for lead and cadmium. Only one sample of ox kidney was above the limit for lead. Sample results were also used in a food safety risk assessment for consumers of offal and offal products.

Methodology

Sampling

Ventress Technical Limited collected 165 samples of offal and offal products from across the UK between March and May 2005; 101 samples were collected in England, 28 in Scotland, 22 in Wales and 14 in Northern Ireland. Samples were collected from a range of retail outlets including supermarkets, smaller shops and specialist retailers.

A range of products was sampled: liver (70), kidney (23), pâté (21), tongue (16), heart (8), black pudding (8), haggis (7) and other products such as tripe, sweetbread, chitterling and throatbread (12). The choice of samples aimed to reflect both market share as well as to cover as wide a range of products as possible. Consequently, this survey represents a “snapshot” of the market and no inference should be drawn from the inclusion of a particular brand of a product.

The product description, pack size, country of origin, manufacturer’s contact information, manufacturing code details (shelf life and batch codes) and retailer information was recorded for each sample and is summarised in Annex 2 and presented in full in the contractor’s report⁴.

All samples were analysed “as sold”. Samples were homogenised by Central Science Laboratory (CSL) to produce four sub-samples, and then kept at –20°C until required for use. Prior to analysis, concentrated nitric acid was added to each sub-sample and solubilised using a microwave-assisted digestion system. The analytical method used was inductively coupled plasma-mass spectrometry (ICP-MS).

Quality control

CSL has United Kingdom Accreditation Service (UKAS) accreditation ISO17025 regarding testing and calibration procedures, and has consistently achieved satisfactory scores in the trace element rounds of the Food Analysis Performance Assessment Scheme (FAPAS). Further details of the analyses are given in the contractor’s final report⁵, which is available from the FSA library (see Further Information).

Results

A summary of the levels of metals and other elements found is summarised in table 2. The full results, including retailer and samples details for all samples analysed are given in Annexes 1 and 2. All results are reported on a fresh weight basis. Results that were less than the limit of detection (LOD) were considered as being equal to the LOD when calculating mean values. The results are discussed below for each element in turn. Retailers whose products showed high results were invited to comment, but none wished to do so.

Comparison with previous surveys

Mean levels of metals and other elements found in this survey are comparable to those previously reported in MAFF's 1998 survey of cadmium, copper, lead and zinc in offal and the FSA's 2000 UK total diet study.

OFFAL AND OFFAL PRODUCTS SAMPLES

Arsenic, cadmium, lead and mercury

One sample of diced ox kidney was found to have a lead concentration of 0.59 mg/kg, above the regulatory limit of 0.5 mg/kg. None of the samples analysed were found to be above the regulatory limits for arsenic and/or cadmium. There are no regulatory limits for mercury in offal. The highest concentrations of these elements were found in individual samples of chicken liver (0.14 mg/kg of arsenic), pig's kidneys (0.385 mg/kg of cadmium) and lamb's kidney (0.030 mg/kg of mercury).

Aluminium, chromium, copper, iron, manganese, nickel, selenium and zinc

Some of these metals (chromium, copper, iron, manganese, selenium and zinc) are considered to be essential to human health, but all may be harmful if taken in excessive amounts. There are no regulatory limits for these metals in foods.

The highest concentrations were found in individual samples of black pudding (9.01 mg/kg of aluminium), duck and champagne pâté (0.92 mg/kg of chromium), veal's liver (442.00 mg/kg of copper), lamb's liver (622 mg/kg of iron). Two samples of calves' liver had the highest levels for selenium (2.48 mg/kg) and zinc (119.0mg/kg). Moreover, two different samples of haggis had the highest levels for nickel (0.35 mg/kg) and manganese (12.00 mg/kg).

Thallium

There are no regulatory limits for thallium. The highest concentration of thallium was found in a sample of venison's liver (0.0185 mg/kg of thallium).

Comparison across different types of offal sampled

Levels of iron, copper and zinc were much higher in liver samples than in the rest of the products analysed. However, mean levels of selenium and cadmium were higher in

samples of kidney. The data are in line with those reported in the previous 1998 MAFF survey.

Estimation of dietary exposure

Intake assessments are presented in table 3 for those products that provide the highest intake of a particular element. These assessments (which calculate the exposure to an element via consumption of a particular food type) were performed under the assumption that the average consumption of offal and offal products is one portion per week and that all products consumed within a given week were at the maximum concentrations found. The calculated adult daily intakes are compared to the Provisional Tolerable Weekly Intake (PTWI) recommended by the Joint FAO/WHO Expert Committee on Food Additives (JEFCA). The data presented in Table 3 shows that overall, levels of metals and other elements in the sampled products are (in some cases) high, but do not make a large contribution to average dietary intakes in the population as a whole.

Exposure to metals/elements was low. Looking at the results, the largest contribution to the PTWI of an element is via the consumption of calves or veal liver, with one portion a week constituting intakes of copper at 18% of the PTWI.

Conclusions

A survey of heavy metals and other elements in offal and offal products has been completed. High levels of copper and iron were found in some products. However, estimated dietary exposure to these products does not pose a risk to consumer safety.

References

1. Food Standards Agency (2004): 2000 Total diet study of metals and other elements: *Food Survey Information Sheet No. 48/04*
2. Ministry of Agriculture, Fisheries and Food (1998): Lead, cadmium, copper and zinc in offals. *Food Surveillance Information Sheet No. 160*
3. http://europa.eu.int/comm/food/food/chemicalsafety/contaminants/legisl_en.htm
4. Ventress Technical Limited (2005): Sampling report for the Food Standards Agency survey of metals/dioxins in offal and offal products. Available from the FSA library.
5. Central Science Laboratories (2005): Survey of metals and other elements in offal. Available from the FSA library.

6. WHO (World Health Organisation) (1989): Evaluation of Certain Food Additives and Contaminants: aluminium. Thirty-third Report of the Joint FAO/WHO Expert Committee on Food Additives. WHO Technical Report Series, No. 776
7. WHO (1989): Toxicological evaluations of certain food additives and contaminants: arsenic. 33rd Report of the JECFA, WHO food additive series, No. 24
8. WHO (2001): Safety evaluation of certain food additives and contaminants: cadmium. WHO Food additives series, No. 17
9. EVM (2003): Safe upper levels for vitamins and minerals. Report of the Expert Group on Vitamins and Minerals. Food Standards Agency, May 2003. ISBN 1-904026-11-7. Available at <http://www.food.gov.uk/multimedia/pdfs/vitmin2003.pdf>
10. WHO (1982): Toxicological evaluation of certain food additives: copper. WHO food additives series, No. 17
11. WHO (1983): Toxicological evaluation of certain food additives: iron. WHO food additives series, No. 18
<http://www.inchem.org/documents/jecfa/jecmono/v18je01.htm>
12. WHO (2000): Safety evaluation of certain food additives and contaminants: lead. WHO food additives series, No. 44
13. WHO (2003): Summary and conclusions of the 61st meeting: methyl mercury. Available at http://www.fao.org/es/esn/jecfa/whatisnew_en.stm
14. WHO TDI for nickel, available at
http://www.environment-agency.gov.uk/commondata/acrobat/tox8_nickel_675975.pdf
15. WHO (1982): Safety evaluation of certain food additives and contaminants: zinc. WHO food additives series, No. 17

Further Information

The final reports of this survey are held in the library and information centre at the Food Standards Agency. If you would like to consult or receive a copy, please contact:

Library and Information Centre
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125 Kingsway
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Table 1 Limits of detection and uncertainty measurement (UM)^a for metals and other elements

Element	Limit of detection (mg/kg)	Concentration range ^b (mg/kg)	UM (%)
Aluminium	0.05	0.3-5.0	11
Arsenic	0.01	<1.0	65
Cadmium	0.003	0.013-6.200	16
Chromium	0.02	***	15
Copper	0.05	0.3-21.4	15
Iron	2	18.8-177.4	10
Lead	0.005	<0.2	32 ^c
Manganese	0.03	19.6-23.1	14
Mercury	0.005	<0.2	39
Nickel	0.02	***	15
Selenium	0.01	***	24
Thallium	0.0005	***	12
Zinc	0.2	2.5-69.9	15

^a Calculated from historical FAPAS performance data.

*** Calculated from “spike and “CRM” recovery data.

^b Concentration range for which measurement of uncertainty applies. The UM won’t improve significantly as the analyte concentration increases.

^c For lead, when the concentration range is between 0.2 and 1.17 mg/kg the measurement of uncertainty becomes 14%.

Table 2 Summary of results by type of product (mg/kg)

	N	AI	Cr	Mn	Fe	Ni	Cu	Zn	As	Se	Cd	Hg	Tl	Pb	
Black pudding	7	Mean	4.13	0.03	3.51	160	0.10	0.85	4.9	0.00	0.08	0.004	0.000	0.0005	0.009
		Max	9.01	0.04	6.41	193	0.19	1.33	7.1	0.01	0.12	0.007	0.005	0.0005	0.015
		Min	1.17	0.02	1.65	136	0.05	0.48	2.7	0.01	0.06	0.003	0.005	0.0005	0.005
Chitterlings	2	Mean	0.19	0.02	0.34	16	0.03	1.39	26.7	0.01	0.24	0.007	0.005	0.0006	0.005
		Max	0.23	0.02	0.39	22	0.03	1.43	27.1	0.01	0.26	0.011	0.005	0.0007	0.005
		Min	0.14	0.02	0.29	10	0.02	1.35	26.2	0.01	0.22	0.003	0.005	0.0005	0.005
Haggis	7	Mean	1.50	0.00	7.40	35	0.20	7.20	17.7	0.01	0.11	0.008	0.005	0.0005	0.009
		Max	3.93	0.04	12.00	51	0.35	28.10	25.7	0.01	0.18	0.017	0.005	0.0006	0.017
		Min	0.54	0.02	3.37	14	0.08	1.71	5.6	0.01	0.05	0.003	0.005	0.0005	0.005
Heart	8	Mean	0.07	0.02	0.25	37	0.03	3.25	17.1	0.01	0.18	0.003	0.006	0.0012	0.005
		Max	0.10	0.04	0.50	44	0.05	3.59	25.7	0.01	0.25	0.003	0.009	0.0023	0.005
		Min	0.05	0.02	0.17	30	0.02	2.91	14.0	0.01	0.09	0.003	0.005	0.0005	0.005
Kidney	23	Mean	0.12	0.02	1.14	48	0.03	4.51	22.4	0.01	1.38	0.183	0.008	0.0049	0.068
		Max	0.24	0.04	1.67	89	0.04	7.42	27.8	0.05	2.03	0.385	0.030	0.0113	0.586
		Min	0.05	0.02	0.78	27	0.02	3.27	16.0	0.01	0.68	0.014	0.005	0.0005	0.005
Liver	71	Mean	0.19	0.02	3.11	105	0.02	52.75	48.7	0.02	0.45	0.039	0.006	0.0015	0.034
		Max	1.44	0.11	5.78	622	0.06	442.00	119.0	0.14	2.48	0.150	0.017	0.0185	0.381
		Min	0.05	0.02	1.45	14	0.02	2.55	10.6	0.01	0.06	0.006	0.005	0.0005	0.005
Pâté	21	Mean	1.14	0.09	1.34	62	0.04	6.10	25.8	0.02	0.27	0.016	0.005	0.0007	0.006
		Max	3.16	0.92	2.19	104	0.11	35.50	42.5	0.13	0.51	0.031	0.006	0.0016	0.008
		Min	0.11	0.02	0.88	33	0.02	1.39	14.0	0.01	0.16	0.008	0.005	0.0005	0.005
Tongue	16	Mean	1.12	0.04	0.17	23	0.04	1.54	27.9	0.01	0.16	0.003	0.005	0.0005	0.008
		Max	3.94	0.12	0.33	34	0.05	2.31	46.3	0.02	0.25	0.004	0.005	0.0008	0.029
		Min	0.16	0.02	0.05	16	0.02	0.97	18.4	0.01	0.05	0.003	0.005	0.0005	0.005
Tripe	8	Mean	0.31	0.02	0.30	3	0.02	0.27	11.9	0.01	0.03	0.003	0.005	0.0005	0.005
		Max	0.98	0.04	1.26	4	0.03	0.52	27.9	0.01	0.03	0.003	0.005	0.0005	0.005
		Min	0.06	0.02	0.03	2	0.02	0.16	6.8	0.01	0.01	0.003	0.005	0.0005	0.005
Sweetbreads	1		0.94	0.04	0.19	12	0.02	0.62	17.5	0.01	0.12	0.003	0.005	0.0005	0.006
Throatbreads	1		0.77	0.02	0.21	10	0.02	0.67	17.2	0.01	0.24	0.003	0.005	0.0008	0.005

All results below the limit of detection have been replaced with the relevant limit of detection.

Table 3 Estimated weekly dietary exposure from offal and offal products for adults

	Maximum concentration found (mg/kg)	Produce with highest level of contaminant	Weight of average portion ^a (kg)	Calculated average weekly adult intake ^b (micrograms/kg body weight)	Relevant safety guidelines (micrograms/kg bodyweight/week) ^{6,7,8,9,10,11,12,13,14,15}	Contribution to PTWI ^c (%)
Aluminium	9.01	Black pudding	0.075	9.64	7,000	0.1
Arsenic	0.14	Chicken liver	0.100	0.20	15	1.3
Cadmium	0.385	Pigs kidney	0.112	0.62	7	8.8
Chromium	0.92	Pâté	0.080	1.05	1,050	0.1
Copper	442.00	Veal liver	0.100	630.53	3,500	18.0
Iron	622	Lambs liver	0.100	887.30	5,600	15.8
Lead	0.586	Ox kidney	0.112	0.94	25	3.7
Manganese	12.00	Haggis	0.100	17.12	n/a	n/a
Mercury	0.030	Lambs kidney	0.112	0.05	1.61	3.1
Nickel	0.35	Haggis	0.100	0.50	35	1.4
Selenium	2.48	Calves liver	0.100	3.54	53	6.7
Thallium	0.0185	Venison liver	0.100	0.03	n/a	n/a
Zinc	119.0	Calves liver	0.100	169.76	7,000	2.4

^a Weight of an average portion as described in the FSA portion book (*Food Portion Sizes*, Food Standards Agency, The Stationery Office). For those products where a portion size was not available, this has been estimated at 0.100 kg.

^b Based on a 70.1 kg adult eating one portion of offal and offal products per week.

^c Based on consumption of one portion of product with the maximum concentration found per week.

Annex 1: Results for individual samples of offal and offal products

Sample code	Description	Brand	Concentration in sample (mg/kg)												
			Al (0.05)	Cr (0.02)	Mn (0.03)	Fe (2)	Ni (0.02)	Cu (0.05)	Zn (0.2)	As (0.01)	Se (0.01)	Cd (0.003)	Hg (0.005)	Tl 0.0005	Pb (0.005)
Black pudding															
11401	Real Lancashire Black Pudding	R. S. Ireland	9.01	0.03	3.28	157	0.09	0.89	4.2	<0.01	0.07	0.004	<0.005	<0.0005	0.01
11446	Black Pudding	Asda	8.93	0.02	1.65	136	0.05	0.5	2.9	<0.01	0.06	0.004	<0.005	<0.0005	0.015
11461	Black Pudding	Puredrive Fine Foods	2.44	<0.02	1.87	137	0.05	0.48	2.7	<0.01	0.06	0.004	<0.005	<0.0005	0.006
11464	Premium Black Pudding	Country Park Foods	3.53	0.03	4.07	193	0.1	0.88	6.6	<0.01	0.12	0.004	<0.005	<0.0005	0.006
11478	Black Pudding	Marks & Spencer	2.44	0.03	4.65	136	0.14	1.33	7.1	<0.01	0.10	0.007	<0.005	<0.0005	<0.005
11480	Black Pudding	None declared	1.39	0.03	2.61	171	0.07	0.79	5.6	<0.01	0.09	<0.003	<0.005	<0.0005	<0.005
11492	Black Pudding	None declared	1.17	0.04	6.41	188	0.19	1.08	5.3	<0.01	0.07	0.004	<0.005	<0.0005	0.015
Haggis															
11485	Traditional Recipe Haggis	Grant's	1.37	<0.02	7.18	47	0.22	1.71	12.6	<0.01	0.12	<0.003	<0.005	0.0006	<0.005
11489	Haggis - slicing	None declared	3.93	0.04	12	25	0.27	2.71	24.8	<0.01	0.05	0.01	<0.005	<0.0005	0.017
11491	Haggis Olives	H W Irvine	0.55	<0.02	4.43	30	0.13	5.05	25.7	<0.01	0.11	0.003	<0.005	<0.0005	0.01
11495	Haggis	None declared	0.78	0.03	7.28	36	0.17	7.42	17.7	<0.01	0.13	0.005	<0.005	<0.0005	0.008
11496	Hand-Made Traditional Haggis	MacSween of Edinburgh	1.06	0.04	8.77	51	0.21	1.89	16.5	<0.01	0.11	0.004	<0.005	<0.0005	<0.005
11499	Haggis	None declared	2.11	0.02	8.79	40	0.35	28.1	20.7	<0.01	0.18	0.017	<0.005	<0.0005	0.012
11514	Haggis Neeps & Tatties	McIntosh	0.54	0.02	3.37	14	0.08	3.54	5.6	<0.01	0.06	0.013	<0.005	0.0006	<0.005
Pâté															
11381	Reduced Fat Brussels Pate	Waitrose	1.27	<0.02	1.86	104	<0.02	5.62	40.1	<0.01	0.26	0.016	<0.005	<0.0005	<0.005
11382	Organic Chicken Pate	Waitrose	2.08	0.04	1.51	38	0.02	1.96	14	0.13	0.34	0.022	0.006	0.001	0.006
11383	Smooth Chicken Liver Pate	Sainsbury's	0.56	0.03	0.95	36	0.04	1.39	15	<0.01	0.28	0.008	0.006	<0.0005	<0.005
11384	Medium Coarse Ardennes Pate	Sainsbury's	1.43	0.03	1.4	89	0.04	5.17	30.4	<0.01	0.25	0.018	<0.005	<0.0005	<0.005
11393	Brussels Reduced Fat Pate	Somerfield	0.68	<0.02	1.38	103	0.05	8.21	39.4	<0.01	0.29	0.015	<0.005	0.0015	0.007

11413	Garlic and Liver Pate	Mortier	1.71	0.03	1.37	78	0.03	6.34	35.4	<0.01	0.18	0.02	<0.005	<0.0005	0.007
11425	Traditional Brussels Pate	Sanpareil	2.63	0.05	1.56	99	0.04	7.44	42.5	<0.01	0.33	0.021	<0.005	<0.0005	<0.005
11429	Brussels Pate	Kwik Save	0.8	<0.02	1.23	56	0.04	4.16	30.5	<0.01	0.19	0.018	<0.005	0.0009	<0.005
11430	Chicken & Bacon Pate	Morrisons	0.56	0.04	1.19	49	0.05	1.9	16.4	<0.01	0.18	0.012	<0.005	<0.0005	<0.005
11431	Duck & Champagne Pate	Morrisons	3.16	0.92	2.19	94	0.08	35.5	25.9	<0.01	0.51	0.031	<0.005	0.0005	<0.005
11448	Chicken, Bacon & Red Wine Pate	Asda	0.26	0.13	1.07	57	0.07	3.62	23.1	<0.01	0.37	0.011	<0.005	0.0016	<0.005
11470	Pate de Foie de Volaille au Calvados	Conserverie St. Christophe	0.11	<0.02	0.96	33	0.02	1.44	16.7	<0.01	0.22	0.01	<0.005	<0.0005	<0.005
11474	Duck & Orange Pate	Tesco	1.17	<0.02	1.41	37	<0.02	5.99	17.1	<0.01	0.36	0.022	<0.005	0.0007	<0.005
11477	Brussels Pate	Marks & Spencer	0.48	0.18	1.03	44	0.03	4.11	30.5	<0.01	0.19	0.013	<0.005	0.0009	0.006
11486	Rannoch Smoked Duck Pate	Castle MacLellan	1.07	0.05	1.84	52	0.11	17.1	21.6	<0.01	0.29	0.02	<0.005	0.0009	0.008
11500	Liver & Bacon Spreading Pate	Tesco Value	0.77	0.03	1.04	46	<0.02	2.19	22	<0.01	0.19	0.014	<0.005	0.0007	0.006
11507	Spicy Basque Pate	Gastronomie Basque	0.44	<0.02	1.29	54	0.02	3.93	26.6	<0.01	0.25	0.012	<0.005	0.0008	0.006
11511	Brussels Pate	None declared	1.24	<0.02	1.38	54	0.03	2.96	23.8	<0.01	0.16	0.018	<0.005	0.0007	<0.005
11517	Medium Coarse Ardennes Pate	Iceland	0.97	0.05	0.88	53	0.03	3.54	26.6	<0.01	0.25	0.012	0.006	0.0005	<0.005
11518	Brussels Pate	Heritage	0.8	0.03	1.13	61	<0.02	3.75	29	<0.01	0.26	0.02	<0.005	<0.0005	<0.005
11528	Chicken Liver Pate	Marks & Spencer	1.82	0.1	1.46	60	0.03	1.77	16	<0.01	0.32	0.012	<0.005	0.0005	<0.005

Heart

11371	Pigs Heart	None declared	<0.05	<0.02	0.24	44	<0.02	3	15.6	<0.01	0.23	<0.003	<0.005	0.0022	<0.005
11405	Chicken Hearts	None declared	0.06	<0.02	0.5	30	<0.02	3.39	25.7	<0.01	0.25	<0.003	<0.005	0.0019	<0.005
11426	Lamb Heart	Morrisons	0.09	0.03	0.17	37	0.05	2.91	15.9	<0.01	0.09	<0.003	<0.005	<0.0005	<0.005
11458	Lambs Hearts	None declared	0.08	<0.02	0.23	40	<0.02	3.31	15.7	<0.01	0.19	<0.003	<0.005	<0.0005	<0.005
11467	Lambs Hearts	None declared	0.06	0.02	0.17	36	<0.02	3.43	17.3	<0.01	0.09	<0.003	0.009	<0.0005	<0.005
11504	Lamb Heart	None declared	<0.05	0.04	0.24	32	<0.02	3.14	14.7	<0.01	0.19	<0.003	<0.005	0.0023	<0.005
11505	Lamb's Heart	Glenfernate Fresh Meat	0.1	<0.02	0.28	37	0.03	3.26	14	<0.01	0.24	<0.003	<0.005	0.0008	<0.005
11525	Lambs Hearts	None declared	0.08	<0.02	0.18	36	<0.02	3.59	17.8	<0.01	0.15	<0.003	<0.005	<0.0005	<0.005

Kidney

11379	Pigs Kidney	None declared	0.12	<0.02	1.67	50	0.04	5.48	25.3	<0.01	1.68	0.225	0.01	0.0014	<0.005
11387	Pigs Kidneys	None declared	0.11	<0.02	1.34	41	0.04	6.5	26.9	<0.01	1.8	0.385	0.009	0.003	0.008
11392	Pigs Kidneys	None declared	<0.05	<0.02	1.34	40	0.04	5.84	27.8	0.01	1.47	0.262	0.014	0.0014	0.006

11408	Pigs Kidneys	None declared	0.05	<0.02	1.61	33	<0.02	5.36	25	<0.01	1.44	0.199	0.012	0.0006	<0.005
11442	Pigs Kidney	None declared	<0.05	<0.02	1.2	37	0.03	5.09	23	<0.01	1.49	0.19	<0.005	0.0098	<0.005
11457	Pigs Kidneys	None declared	0.08	<0.02	1.36	39	0.02	6.31	24.7	<0.01	2.03	0.23	0.006	0.0045	0.007
11482	Pigs Kidneys	None declared	0.06	<0.02	1.38	27	0.04	7.42	25.3	0.02	1.88	0.348	0.006	0.0013	0.025
11519	Pig's Kidneys	Somerfield	<0.05	<0.02	1.4	47	0.03	5.07	22.7	<0.01	1.81	0.328	<0.005	0.0036	<0.005
11376	Lambs Kidney	None declared	0.13	<0.02	1.07	44	0.03	3.71	18.3	<0.01	1.03	0.077	<0.005	0.0019	0.034
11409	Lambs Kidney	None declared	0.11	<0.02	1.24	32	<0.02	3.77	24.5	<0.01	0.68	0.018	<0.005	0.0008	0.081
11411	Lambs Kidney	None declared	0.18	<0.02	0.98	66	<0.02	3.42	19.9	<0.01	1.37	0.106	0.008	0.0014	0.057
11416	Lambs Kidney	None declared	0.22	<0.02	1.03	36	0.02	3.37	22.9	<0.01	0.88	0.014	<0.005	0.0031	0.094
11444	Lambs Kidney (Halal)	None declared	0.18	<0.02	0.8	69	<0.02	3.29	20.4	<0.01	1.15	0.098	0.03	0.0089	0.109
11476	New Zealand Lamb Whole Kidneys	Tesco	0.15	<0.02	0.78	42	0.02	3.27	27.6	<0.01	1.09	0.302	0.013	0.0113	0.068
11512	Lamb kidneys	Glenfernate Fresh Meat	0.24	<0.02	1	89	0.03	4.26	23.9	<0.01	1.3	0.11	0.008	0.0053	0.052
11533	Lamb Kidney	None declared	0.18	0.02	1.04	72	0.02	3.57	22.8	<0.01	1.14	0.065	0.008	0.0061	0.077
11388	Ox Kidney	None declared	0.1	<0.02	1.26	56	<0.02	5.04	22.6	<0.01	1.19	0.258	0.006	0.0066	0.067
11407	Ox Kidney	None declared	0.06	<0.02	0.98	40	<0.02	4.22	18.9	<0.01	1.74	0.106	0.005	0.009	0.053
11412	Ox Kidney	None declared	0.1	<0.02	0.96	42	<0.02	3.3	16.5	<0.01	1.61	0.143	<0.005	0.0005	0.032
11440	Ox Kidney	None declared	0.09	0.04	0.99	53	<0.02	4.33	22	0.02	1.27	0.251	<0.005	0.0086	0.121
11472	British Ox Kidney	Waitrose	0.07	<0.02	0.82	37	<0.02	3.37	16	0.01	1.05	0.106	0.005	0.0047	0.036
11513	Ox Kidneys	Glenfernate Fresh Meat	0.18	<0.02	1.04	46	<0.02	4.18	20.9	<0.01	1.28	0.172	<0.005	0.0098	0.04
11515	Diced Ox Kidney	None declared	0.16	<0.02	0.85	60	<0.02	3.45	18.2	0.05	1.4	0.206	0.006	0.0085	0.586

Liver															
11370	Pigs Liver	None declared	0.28	<0.02	5.78	203	<0.02	11.3	66.2	<0.01	0.44	0.092	0.009	<0.0005	0.013
11373	Pigs Liver	None declared	0.2	<0.02	3.5	112	<0.02	78.5	76.1	<0.01	0.72	0.106	0.008	<0.0005	0.006
11395	Pigs Liver	None declared	0.12	<0.02	2.8	198	<0.02	14.4	71.5	<0.01	0.71	0.049	<0.005	0.0032	0.013
11399	Pigs Liver	None declared	0.07	<0.02	3.2	156	<0.02	5.59	51	<0.01	0.51	0.056	<0.005	<0.0005	0.006
11402	Pigs Liver	None declared	0.08	0.02	4.02	103	<0.02	12.7	60.7	0.06	0.82	0.063	0.016	0.0008	<0.005
11404	Pigs Liver	None declared	<0.05	<0.02	3.16	54	<0.02	5.95	41	<0.01	0.72	0.018	<0.005	0.0023	<0.005
11420	Pigs liver	None declared	<0.05	<0.02	3.14	138	<0.02	17.2	98.9	0.04	0.54	0.072	0.017	<0.0005	0.016
11423	Pigs Liver	None declared	0.22	0.02	3.36	84	<0.02	29.8	45.5	<0.01	0.2	0.044	<0.005	0.0015	0.062
11432	6 Pig's Liver Slices	Morrisons	0.06	<0.02	2.98	145	<0.02	8.15	75.5	<0.01	0.38	0.038	<0.005	0.0015	<0.005

11438	Pig Liver	Morrisons	<0.05	<0.02	3.06	197	<0.02	5.82	77.4	<0.01	0.58	0.025	<0.005	0.0056	<0.005
11441	Pigs Liver	None declared	0.21	<0.02	3.73	38	<0.02	20.8	50.2	<0.01	0.54	0.045	0.008	<0.0005	0.006
11449	British Pork Liver	Asda	0.08	<0.02	3	164	<0.02	7.91	62.5	0.01	0.61	0.05	0.006	<0.0005	0.008
11465	Sliced Pig's Liver	Co-op	0.07	0.03	2.37	153	<0.02	6.57	74.5	<0.01	0.43	0.064	<0.005	0.0024	0.007
11483	Pigs Liver	None declared	<0.05	<0.02	3.89	267	<0.02	6	44.4	<0.01	0.6	0.025	0.005	<0.0005	<0.005
11484	Pork Liver	Sainsbury's	0.06	<0.02	2.89	154	<0.02	7.29	64.8	<0.01	0.5	0.038	<0.005	0.0015	0.008
11487	Fresh Welsh Pigs Liver	None declared	0.07	<0.02	3.02	105	<0.02	8.96	52	<0.01	0.69	0.041	<0.005	0.0016	0.009
11493	Pig Liver	None declared	0.12	<0.02	2.44	70	<0.02	81.1	41.2	<0.01	0.07	0.027	<0.005	<0.0005	0.038
11520	Sliced Pigs Liver	None declared	0.08	0.02	3.06	104	<0.02	7.8	105	<0.01	0.63	0.042	0.005	0.0011	0.011
11523	Sliced Pigs Liver	None declared	0.06	<0.02	3.2	91	<0.02	8.29	67.5	<0.01	0.4	0.061	<0.005	0.0028	<0.005
11534	Rare Breeds Pig Liver	None declared	0.31	0.02	2.87	85	<0.02	8.15	68	<0.01	0.58	0.032	0.007	0.0012	<0.005
11372	Lambs Liver	None declared	0.11	<0.02	4.26	106	<0.02	121	50.3	<0.01	0.43	0.012	<0.005	<0.0005	0.06
11374	Lambs Liver	None declared	0.34	0.06	3.84	104	0.04	108	42.7	<0.01	0.13	0.023	<0.005	<0.0005	0.029
11385	Lambs Liver	None declared	<0.05	<0.02	4.6	58	<0.02	77.7	41.5	<0.01	0.69	0.02	<0.005	0.0033	0.013
11389	Fresh Welsh Lambs Liver	None declared	0.23	<0.02	4.17	64	<0.02	23.8	40.6	<0.01	0.36	0.016	0.017	0.0016	0.147
11398	Sliced Lambs Liver	Somerfield	0.36	<0.02	2.92	56	<0.02	74.4	45.5	<0.01	0.19	0.03	<0.005	<0.0005	<0.005
11427	Lambs Liver	None declared	0.21	0.02	3.14	72	<0.02	64	47	<0.01	0.15	0.019	<0.005	<0.0005	0.021
11439	Lambs Liver	Iceland	0.2	0.04	3.43	69	<0.02	45.8	47.2	<0.01	0.16	0.02	<0.005	<0.0005	0.015
11443	Lambs Liver (Halal)	None declared	0.12	0.02	3.35	268	0.03	55.5	38.3	<0.01	0.52	0.04	<0.005	0.0016	0.381
11445	Lambs Liver	None declared	0.32	0.08	3.5	76	<0.02	75.7	46.2	<0.01	0.3	0.033	<0.005	0.001	0.011
11452	Lambs Liver	None declared	0.08	<0.02	4.23	103	<0.02	90.9	43.4	<0.01	0.2	0.016	<0.005	<0.0005	0.074
11456	Lambs Liver	None declared	0.16	<0.02	4.47	73	<0.02	51.4	59.6	<0.01	0.14	0.019	<0.005	<0.0005	0.098
11459	Lambs Liver	None declared	0.15	<0.02	4.3	96	<0.02	72.5	50.7	<0.01	0.41	0.035	<0.005	<0.0005	0.031
11469	Sliced Lambs' Liver	Co-op	0.32	<0.02	2.81	56	<0.02	58.8	44.9	<0.01	0.22	0.024	0.006	<0.0005	<0.005
11473	New Zealand Farm Assured Lamb Sliced Liver	Waitrose	0.13	<0.02	2.72	63	<0.02	64.5	42.5	<0.01	0.13	0.015	<0.005	<0.0005	0.01
11494	Lamb Liver	None declared	<0.05	<0.02	4.18	132	<0.02	8	71.1	0.03	0.45	0.025	0.014	0.0011	0.005
11501	Sliced Lamb Liver with Onions	Farmfoods	0.24	<0.02	2.53	43	0.03	49.9	33.3	<0.01	0.19	0.098	<0.005	<0.0005	0.006
11509	Lamb's Liver	Glenfernate Fresh Meat	0.14	<0.02	4.07	62	<0.02	231	36.9	<0.01	0.73	0.03	<0.005	0.0011	0.037
11527	Lamb Liver	Sainsbury's	0.25	<0.02	3.08	52	<0.02	92.2	50.4	<0.01	0.27	0.041	<0.005	<0.0005	<0.005

11530	Fresh Lambs Liver	Tesco	0.34	<0.02	4.38	622	<0.02	77.9	36	0.02	0.26	0.037	<0.005	<0.0005	0.263
11531	Lamb Liver	Asda	0.25	<0.02	2.98	52	<0.02	91.3	44.1	<0.01	0.29	0.038	<0.005	0.0057	<0.005
11378	Poultry Liver	None declared	0.58	<0.02	3.68	227	<0.02	4.84	49.7	<0.01	0.41	0.064	<0.005	0.0016	<0.005
11418	Halal Poultry Liver	None declared	<0.05	<0.02	3.37	133	<0.02	4.24	37	<0.01	0.59	0.028	<0.005	<0.0005	<0.005
11396	Gressingham Duck (Sold as Duck Liver)	Green Label Foods	0.16	<0.02	4.98	164	<0.02	50.5	55.3	0.01	0.96	0.15	<0.005	<0.0005	0.041
11506	Venison Liver	Glenfernate Fresh Meat	0.28	<0.02	4.4	262	<0.02	7.27	27	<0.01	0.24	0.145	0.006	0.0185	0.145
11522	Roe Venison Liver	Andrews	0.11	<0.02	3	226	<0.02	25.3	35.6	<0.01	0.2	0.048	<0.005	0.0034	0.013
11397	Natural Farmed Welsh Veal Liver	None declared	1.31	<0.02	1.81	32	<0.02	442	86.4	<0.01	0.54	0.072	<0.005	<0.0005	0.014
11403	Calves Liver	None declared	0.08	<0.02	1.95	24	<0.02	438	119	<0.01	0.86	0.034	<0.005	<0.0005	0.043
11415	Milk Fed Calves Liver - Dutch	None declared	0.71	<0.02	1.69	40	<0.02	398	90.6	<0.01	0.87	0.02	<0.005	<0.0005	0.018
11481	Calves Liver	None declared	<0.05	<0.02	3.4	42	<0.02	103	49.2	<0.01	2.48	0.018	<0.005	0.001	0.016
11521	Calf Liver	Andrews	0.08	<0.02	2.26	167	<0.02	66.2	93.4	<0.01	0.3	0.011	<0.005	<0.0005	0.06
11400	Chicken Liver	None declared	<0.05	0.11	2.2	75	0.05	2.95	23.1	0.05	0.53	0.034	0.005	<0.0005	<0.005
11406	Chicken Liver	None declared	0.05	<0.02	3.01	70	<0.02	3.82	29.6	<0.01	0.57	0.011	<0.005	0.0033	<0.005
11414	Chicken Livers	Padley's	<0.05	<0.02	2.76	113	<0.02	2.98	21.9	0.04	0.64	0.03	<0.005	0.0021	<0.005
11417	Free Range Chicken Liver	None declared	0.06	<0.02	2.6	61	<0.02	3.23	25.6	0.03	0.57	0.069	<0.005	0.0027	<0.005
11419	Fresh Chicken Livers	Ronsard	0.06	<0.02	2.52	59	<0.02	3.34	26.6	<0.01	0.38	0.006	<0.005	0.0036	<0.005
11422	Chicken Liver	None declared	<0.05	<0.02	2.02	77	<0.02	3.5	29.9	0.01	0.53	0.022	<0.005	0.0008	<0.005
11433	Chicken Liver	Banham Poultry Ltd	<0.05	<0.02	2.06	61	<0.02	2.55	21.1	0.03	0.3	0.015	<0.005	0.0012	<0.005
11479	Chicken Liver	None declared	<0.05	<0.02	2.07	74	<0.02	2.87	23	0.14	0.52	0.022	0.006	0.0013	<0.005
11503	Chicken Liver	None declared	<0.05	<0.02	2.26	78	<0.02	3.29	25.5	0.11	0.62	0.041	0.01	0.0012	<0.005
11529	Chicken Livers	Tesco	<0.05	<0.02	2.35	81	<0.02	2.8	23	0.01	0.52	0.018	<0.005	0.0012	<0.005
11532	Chicken Liver	None declared	0.06	<0.02	2.49	99	<0.02	3.7	30.9	0.02	0.67	0.052	<0.005	0.0026	<0.005
11424	Ox Liver	None declared	0.09	0.06	2.95	47	0.04	9.96	35.1	<0.01	0.07	0.053	<0.005	<0.0005	0.34
11428	Ox Liver	None declared	0.11	0.03	3.23	47	0.02	11.6	44.7	<0.01	0.12	0.038	<0.005	<0.0005	0.029
11450	British Ox Liver	Asda	0.18	<0.02	2.88	44	<0.02	92.3	35.3	<0.01	0.64	0.035	<0.005	0.0009	0.008
11451	Ox Liver	None declared	0.36	<0.02	3.22	64	<0.02	3.44	37	<0.01	0.07	0.033	<0.005	<0.0005	0.029
11468	Ox Liver	None declared	0.16	<0.02	2.12	52	<0.02	3.16	35.4	<0.01	0.09	0.027	<0.005	<0.0005	0.043
11508	Ox Liver	Glenfernate Fresh Meat	0.1	<0.02	2.54	54	<0.02	101	33.9	<0.01	0.36	0.03	<0.005	0.0016	0.031

11510	Ox Liver	None declared	0.24	<0.02	3.06	53	<0.02	15	49.1	<0.01	0.06	0.054	<0.005	<0.0005	0.03
11421	Chopped Liver	Gilbert's	1.44	<0.02	2	15	0.06	24.7	10.6	<0.01	0.13	0.012	<0.005	<0.0005	0.007
11463	Liver Sausage	Tesco Value	0.20	<0.02	1.45	53	<0.02	3.56	32.6	<0.01	0.31	0.015	<0.005	0.0011	<0.005
11490	Liver, Bacon & Mash	Tesco	0.38	0.03	1.76	14	0.03	19.6	13.3	<0.01	0.06	0.014	<0.005	0.0006	<0.005

Tongue

11377	Raw Ox Tongue	None declared	0.16	<0.02	0.17	24	<0.02	0.97	35.4	<0.01	0.09	<0.003	<0.005	<0.0005	<0.005
11391	Pork Tongue	None declared	0.98	0.09	0.25	19	0.05	1.71	20.9	<0.01	0.16	<0.003	<0.005	0.0005	<0.005
11410	Ox Tongue (ex delicatessen counter)	None declared	0.32	<0.02	0.05	20	0.03	1	32	<0.01	0.11	<0.003	<0.005	<0.0005	<0.005
11435	Ox Tongue with Gelatine	Rea Valley	2.34	0.05	0.13	26	0.04	1.34	25.7	<0.01	0.05	<0.003	<0.005	<0.0005	<0.005
11436	Ox Tongue Pressed	Morrisons	0.62	<0.02	0.08	24	0.03	1.19	29.1	0.02	0.08	<0.003	<0.005	<0.0005	0.008
11437	Pork Lunch Tongue	Morrisons	0.68	<0.02	0.17	22	0.05	2.07	25.4	0.01	0.2	<0.003	<0.005	<0.0005	<0.005
11447	Lunch Tongue	Asda	0.68	0.12	0.22	24	0.05	2.17	21.5	<0.01	0.24	<0.003	<0.005	<0.0005	<0.005
11453	Raw Ox Tongue	None declared	0.32	0.04	0.12	21	<0.02	1.2	35.2	<0.01	0.11	<0.003	<0.005	<0.0005	<0.005
11462	Lunch Tongue	Ye Olde Oak	0.39	<0.02	0.21	17	0.03	1.84	19.5	<0.01	0.2	<0.003	<0.005	0.0005	<0.005
11466	Lunch Tongue in Jelly	Celebrity	2.4	0.04	0.2	21	0.05	1.7	23.9	0.02	0.24	0.003	<0.005	0.0008	<0.005
11471	Ox Tongue	Waitrose	0.76	0.04	0.15	24	0.04	1.2	33.2	0.01	0.06	<0.003	<0.005	<0.0005	0.005
11475	Lunch Tongue	Tesco	0.63	<0.02	0.19	26	<0.02	2.31	22.8	0.01	0.25	<0.003	<0.005	<0.0005	<0.005
11488	Lunch Tongue	John Cumming Butcher	0.53	0.04	0.33	16	<0.02	1.62	18.4	0.01	0.14	0.004	<0.005	0.0005	0.029
11498	Ox Tongue - Cooked	None declared	0.74	0.03	0.15	24	<0.02	1.26	38.6	0.02	0.18	<0.003	<0.005	<0.0005	<0.005
11516	Lunch Tongue	Princes	3.94	<0.02	0.25	20	0.04	1.56	19	0.01	0.21	<0.003	<0.005	0.0008	<0.005
11526	Ox Tongue	Co-op	2.35	0.04	0.11	34	0.05	1.56	46.3	<0.01	0.18	<0.003	<0.005	<0.0005	0.019

Tripe

11375	Tripe	None declared	0.1	<0.02	0.19	2	<0.02	0.52	27.9	<0.01	0.03	<0.003	<0.005	<0.0005	<0.005
11380	Tripe	None declared	0.98	<0.02	0.27	4	<0.02	0.24	11.1	<0.01	0.03	<0.003	<0.005	<0.0005	<0.005
11434	Tripe	None declared	0.1	0.04	0.03	3	0.03	0.24	9.6	<0.01	0.02	<0.003	<0.005	<0.0005	<0.005
11455	Tripe	None declared	0.08	<0.02	0.14	<2	0.03	0.26	9	<0.01	0.02	<0.003	<0.005	<0.0005	<0.005
11460	Tripe	None declared	0.11	<0.02	0.21	<2	<0.02	0.16	7.3	<0.01	0.01	<0.003	<0.005	<0.0005	<0.005
11497	Tripe	None declared	0.06	<0.02	0.12	2	<0.02	0.23	10.3	<0.01	0.03	<0.003	<0.005	<0.0005	<0.005
11502	Tripe	None declared	0.39	<0.02	0.16	3	<0.02	0.32	13.1	<0.01	0.03	<0.003	<0.005	<0.0005	<0.005

11524	Ox Tripe	None declared	0.66	<0.02	1.26	3	<0.02	0.21	6.8	<0.01	0.03	<0.003	<0.005	<0.0005	<0.005
Other															
11390	Chitterlings	None declared	0.14	<0.02	0.29	10	0.02	1.43	26.2	<0.01	0.22	<0.003	<0.005	<0.0005	<0.005
11394	Chitterlings	None declared	0.23	<0.02	0.39	22	0.03	1.35	27.1	<0.01	0.26	0.011	<0.005	0.0007	<0.005
11454	Throatbreads	None declared	0.94	0.04	0.19	12	<0.02	0.62	17.5	<0.01	0.12	<0.003	<0.005	<0.0005	0.006
11386	Fresh Welsh Lamb Sweetbreads	None declared	0.77	<0.02	0.21	10	<0.02	0.67	17.2	<0.01	0.24	<0.003	<0.005	0.0008	<0.005

LOD is given below each element in parenthesis

Annex 2: Offal and offal samples collected by sample number

Sample code	Product as described	Brand	Date sample purchased	Name of retailer	Address	Town	Postcode
11370	Pigs Liver	None declared	24.06.05	J. A. Steele	8 Flask Walk	London	NW3 3HE
11371	Pigs Heart	None declared	09.06.05	Trinity Butchers	23 Trinity Square	Gateshead	NE8 1AW
11372	Lambs Liver	None declared	16.06.05	Thompson Butchers	7 Ballyclare Road	Newtonabbey	BT36 5EU
11373	Pigs Liver	None declared	16.06.05	Thompson Butchers	7 Ballyclare Road	Newtonabbey	BT36 5EU
11374	Lambs Liver	None declared	14.06.05	Tramways Quality Butchers	Farmley Road	Newtonabbey	BT36 7TS
11375	Tripe	None declared	16.06.05	Thompson Butchers	7 Ballyclare Road	Newtonabbey	BT36 5EU
11376	Lambs Kidney	None declared	16.06.05	Thompson Butchers	7 Ballyclare Road	Newtonabbey	BT36 5EU
11377	Raw Ox Tongue	None declared	16.06.05	Thompson Butchers	7 Ballyclare Road	Newtonabbey	BT36 5EU
11378	Poultry Liver	None declared	16.06.05	Thompson Butchers	7 Ballyclare Road	Newtonabbey	BT36 5EU
11379	Pigs Kidney	None declared	16.06.05	Thompson Butchers	7 Ballyclare Road	Newtonabbey	BT36 5EU
11380	Tripe	None declared	24.06.05	J. A. Steele	8 Flask Walk	London	NW3 3HE
11381	Reduced Fat Brussels Pate	Waitrose	24.06.05	Waitrose	92 - 96 High Road	London	E18 2NA
11382	Organic Chicken Pate	Waitrose	24.06.05	Waitrose	92 - 96 High Road	London	E18 2NA
11383	Smooth Chicken Liver Pate	Sainsbury's	10.05.05	Sainsbury's	Unit 14a Forestside Shopping Centre	Belfast	BT8 6FX
11384	Medium Coarse Ardennes Pate	Sainsbury's	10.05.05	Sainsbury's	Unit 14a Forestside Shopping Centre	Belfast	BT8 6FX
11385	Lambs Liver	None declared	18.06.05	R. C. Evans	8 Merthyr Road	Cardiff	CF14 1DG
11386	Fresh Welsh Lamb Sweetbreads	None declared	18.06.05	R. T. Perkins	Central Market	Cardiff	CF1 2AV
11387	Pigs Kidneys	None declared	18.06.05	R. T. Perkins	Central Market	Cardiff	CF1 2AV
11388	Ox Kidney	None declared	18.06.05	R. T. Perkins	Central Market	Cardiff	CF1 2AV
11389	Fresh Welsh Lambs Liver	None declared	18.06.05	R. T. Perkins	Central Market	Cardiff	CF1 2AV
11390	Chitterlings	None declared	18.06.05	J. T. Morgan	Central Market	Cardiff	CF1 2AV
11391	Pork Tongue	None declared	18.06.05	J. T. Morgan	Central Market	Cardiff	CF1 2AV
11392	Pigs Kidneys	None declared	18.06.05	J. T. Morgan	Central Market	Cardiff	CF1 2AV
11393	Brussels Reduced Fat Pate	Somerfield	18.06.05	Somerfield	34 - 40 Merthyr Road	Cardiff	CF14 1DH
11394	Chitterlings	None declared	18.06.05	A. W. Griffiths	Central Market	Cardiff	CF1 2AV
11395	Pigs Liver	None declared	18.06.05	A. W. Griffiths	Central Market	Cardiff	CF1 2AV
11396	Gressingham Duck (Sold as Duck Liver)	Green Label Foods	18.06.05	E. Ashton	Central Market	Cardiff	CF1 2AV
11397	Natural Farmed Welsh Veal Liver	None declared	18.06.05	J. T. Morgan	Central Market	Cardiff	CF1 2AV

11398	Sliced Lambs Liver	Somerfield	18.06.05	Somerfield	34 - 40 Merthyr Road	Cardiff	CF14 1DH
11399	Pigs Liver	None declared	18.06.05	R. C. Evans	8 Merthyr Road	Cardiff	CF14 1DG
11400	Chicken Liver	None declared	04.06.05	Robson Butchers Market Stall	Stall No 69	Barnet Market	
11401	Real Lancashire Black Pudding	R. S. Ireland	04.06.05	W T Parish	119 High Street	Barnet	EN5 5UZ
11402	Pigs Liver	None declared	04.06.05	MacDonalds & Sons	4 Station Parade	Barnet	EN4 0DL
11403	Calves Liver	None declared	04.06.05	MacDonalds & Sons	4 Station Parade	Barnet	EN4 0DL
11404	Pigs Liver	None declared	24.06.05	Pure Meat Co.	258 Kentish Town Road	London	NW5 2AA
11405	Chicken Hearts	None declared	24.06.05	Martins Butchers	177 Camden High Street	London	NW1 7PY
11406	Chicken Liver	None declared	24.06.05	J. A. Steele	8 Flask Walk	London	NW3 1HE
11407	Ox Kidney	None declared	24.06.05	J. A. Steele	8 Flask Walk	London	NW3 1HE
11408	Pigs Kidneys	None declared	24.06.05	J. A. Steele	8 Flask Walk	London	NW3 1HE
11409	Lambs Kidney	None declared	24.06.05	J. A. Steele	8 Flask Walk	London	NW3 1HE
11410	Ox Tongue (ex delicatessen counter)	None declared	22.06.05	Sawers	Unit 7	Belfast	BT1 6ES
11411	Lambs Kidney	None declared	22.06.05	McMahon Butchers	7 Atlantic Avenue	Belfast	BT15 2HN
11412	Ox Kidney	None declared	22.06.05	McMahon Butchers	7 Atlantic Avenue	Belfast	BT15 2HN
11413	Garlic and Liver Pate	Mortier	22.06.05	Dunnes	11 High Street	Belfast	BT1 2AA
11414	Chicken Livers	Padley's	24.06.05	Waitrose	92 - 96 High Road	London	E18 2NA
11415	Milk Fed Calves Liver - Dutch	None declared	24.06.05	Silverside	5 Clifton Road	London	W9 1SZ
11416	Lambs Kidney Free Range	None declared	24.06.05	Silverside	5 Clifton Road	London	W9 1SZ
11417	Chicken Liver	None declared	24.06.05	Silverside	5 Clifton Road	London	W9 1SZ
11418	Halal Poultry Liver	None declared	24.06.05	Happy Family Food Halal Meats	556 Harrow Road	London	W9 3QG
11419	Fresh Chicken Livers	Ronsard	24.06.05	Frank's Butchers	188 Eversholt Street	London	NW1 1BJ
11420	Pigs liver	None declared	24.06.05	Frank's Butchers	188 Eversholt Street	London	NW1 1BJ
11421	Chopped Liver	Gilbert's	24.06.05	Waitrose	92 - 96 High Road	London	E18 2NA
11422	Chicken Liver	None declared	24.06.05	Martins Butchers	177 Camden High Street	London	NW1 7PY
11423	Pigs Liver	None declared	24.06.05	Martins Butchers	177 Camden High Street	London	NW1 7PY
11424	Ox Liver	None declared	24.06.05	Martins Butchers	177 Camden High Street	London	NW1 7PY
11425	Traditional Brussels Pate	Sanpareil	08.04.05	Netto	510 Liverpool Road	Manchester	M30 7JA
11426	Lamb Heart	Morrisons	08.04.05	Morrisons	Irwell Place	Manchester	M30 0FH
11427	Lambs Liver	None declared	09.04.05	Gabbotts Farm	47 The Parade	Salford	M27 4BH

11428	Ox Liver	None declared	09.04.05	Gabbotts Farm	47 The Parade	Salford	M27 4BH
11429	Brussels Pate	Kwik Save	09.04.05	Kwik Save	51-59 The Parade	Salford	M27 4BH
11430	Chicken & Bacon Pate	Morrisons	09.04.05	Safeway	49 Swinton Hall Road	Salford	M27 1AA
11431	Duck & Champagne Pate	Morrisons	09.04.05	Safeway	49 Swinton Hall Road	Salford	M27 1AA
11432	6 Pig's Liver Slices	Morrisons	09.04.05	Safeway	49 Swinton Hall Road	Salford	M27 1AA
11433	Chicken Liver	Banham Poultry Ltd	09.04.05	Safeway	49 Swinton Hall Road	Salford	M27 1AA
11434	Tripe	None declared	09.04.05	The Larder	54 Church Street	Manchester	M30 0DF
11435	Ox Tongue with Gelatine	Rea Valley	12.04.05	Morrisons	Irwell Place	Eccles	M30 0FH
11436	Ox Tongue Pressed	Morrisons	12.04.05	Morrisons	Irwell Place	Eccles	M30 0FH
11437	Pork Lunch Tongue	Morrisons	12.04.05	Morrisons	Irwell Place	Eccles	M30 0FH
11438	Pig Liver	Morrisons	12.04.05	Morrisons	Irwell Place	Eccles	M30 0FH
11439	Lambs Liver	Iceland	12.04.05	Iceland	34-36 Arndale Centre	Manchester	M32 9BB
11440	Ox Kidney	None declared	12.04.05	B. C. Kelly	77 Railway Road	Manchester	M41 0XT
11441	Pigs Liver	None declared	12.04.05	Barry's Quality Meats	8 Southway	Eccles	M30 0LJ
11442	Pigs Kidney	None declared	12.04.05	Connor & Thomas Butchers	550 Liverpool Road	Eccles	M30 7JA
11443	Lambs Liver (Halal)	None declared	13.04.05	United Food Store	56 Liverpool Road	Eccles	M30 0WA
11444	Lambs Kidney (Halal)	None declared	13.04.05	United Food Store	56 Liverpool Road	Eccles	M30 0WA
11445	Lambs Liver	None declared	09.06.05	M. I. Dicksons Traditional Butchers	Unit 6, Fowler Street	South Shields	NE33 1NF
11446	Black Pudding	Asda	09.06.05	Asda	25 Ocean Road	South Shields	NE33 2HT
11447	Lunch Tongue	Asda	09.06.05	Asda	25 Ocean Road	South Shields	NE33 2HT
11448	Chicken, Bacon & Red Wine Pate	Asda	09.06.05	Asda	25 Ocean Road	South Shields	NE33 2HT
11449	British Pork Liver	Asda	09.06.05	Asda	25 Ocean Road	South Shields	NE33 2HT
11450	British Ox Liver	Asda	09.06.05	Asda	25 Ocean Road	South Shields	NE33 2HT
11451	Ox Liver	None declared	18.06.05	A. W. Griffiths	Central Market	Cardiff	CF1 2AV
11452	Lambs Liver	None declared	18.06.05	A. W. Griffiths	Central Market	Cardiff	CF1 2AV
11453	Raw Ox Tongue	None declared	18.06.05	K Blackmore & Son	Central Market	Cardiff	CF1 2AV
11454	Throatbreads	None declared	18.06.05	K Blackmore & Son	Central Market	Cardiff	CF1 2AV
11455	Tripe	None declared	18.06.05	R. T. Perkins	Central Market	Cardiff	CF1 2AV
11456	Lambs Liver	None declared	24.06.05	J. A. Steele	8 Flask Walk	London	NW3 3HE
11457	Pigs Kidneys	None declared	09.06.05	Trinity Butchers	23 Trinity Square	Gateshead	NE8 1AW
11458	Lambs Hearts	None declared	09.06.05	Scotts Quality Butchers	15-16 Gateshead Indoor Market	Gateshead	NE8 1AG
11459	Lambs Liver	None declared	09.06.05	Scotts Quality Butchers	15-16 Gateshead Indoor Market	Gateshead	NE8 1AG
11460	Tripe	None declared	09.06.05	Scotts Quality	15-16 Gateshead	Gateshead	NE8 1AG

11461	Black Pudding	Puredrive Fine Foods	09.06.05	Butchers Kwik Save	Indoor Market 239 - 241 High Street	Gateshead	NE8 1EP
11462	Lunch Tongue	Ye Olde Oak	09.06.05	Kwik Save	239 - 241 High Street	Gateshead	NE8 1EP
11463	Liver Sausage	Tesco Value	09.06.05	Tesco Extra	Kingston Park Centre	Newcastle Upon Tyne	NE3 2FP
11464	Premium Black Pudding	Country Park Foods	09.06.05	Fawcetts	Netto at Kings Court	Newcastle	NE3 5NA
11465	Sliced Pig's Liver	Co-op	08.04.05	Co-op	Bentley Avenue	Peterborough	PE7 3ZT
11466	Lunch Tongue in Jelly	Celebrity	08.04.05	Co-op	Bentley Avenue	Peterborough	PE7 3ZT
11467	Lambs Hearts	None declared	08.04.05	Sharp's Butchers	156 Main Street	Peterborough	PE7 3LB
11468	Ox Liver	None declared	08.04.05	Sharp's Butchers	156 Main Street	Peterborough	PE7 3LB
11469	Sliced Lambs' Liver	Co-op	08.04.05	Co-op	Bentley Avenue	Peterborough	PE7 3ZT
11470	Pate de Foie de Volaille au Calvados	Conserverie St. Christophe	08.04.05	Waitrose	Queensgate Centre	Peterborough	PE1 1NR
11471	Ox Tongue	Waitrose	08.04.05	Waitrose	Queensgate Centre	Peterborough	PE1 1NR
11472	British Ox Kidney	Waitrose	08.04.05	Waitrose	Queensgate Centre	Peterborough	PE1 1NR
11473	New Zealand Farm Assured Lamb Sliced Liver	Waitrose	08.04.05	Waitrose	Queensgate Centre	Peterborough	PE1 1NR
11474	Duck & Orange Pate	Tesco	08.04.05	Tesco	Unit 1	Hampton Hargate, Hampton	PE7 8BD
11475	Lunch Tongue	Tesco	08.04.05	Tesco	Unit 1	Hampton Hargate, Hampton	PE7 8BD
11476	New Zealand Lamb Whole Kidneys	Tesco	08.04.05	Tesco	Unit 1	Hampton Hargate, Hampton	PE7 8BD
11477	Brussels Pate	Marks & Spencer	08.04.05	Marks & Spencer	54 Bridge Street	Peterborough	PE1 1DU
11478	Black Pudding	Marks & Spencer	08.04.05	Marks & Spencer	54 Bridge Street	Peterborough	PE1 1DU
11479	Chicken Liver	None declared	10.05.05	J Bell	10 Hautboy Lane	Peterborough	PE8 6TQ
11480	Black Pudding	None declared	10.05.05	Trendalls	22 Market Place	Peterborough	PE7 4BH
11481	Calves Liver	None declared	10.05.05	Trendalls	22 Market Place	Peterborough	PE7 4BH
11482	Pigs Kidneys	None declared	10.05.05	Trendalls	22 Market Place	Peterborough	PE7 4BH
11483	Pigs Liver	None declared	10.05.05	Trendalls	22 Market Place	Peterborough	PE7 4BH
11484	Pork Liver	Sainsbury's	10.05.05	Sainsbury's	St Germain Walk	Huntingdon	PE29 3FG
11485	Traditional Recipe Haggis	Grant's	03.05.05	Tesco	Edinburgh Road	Perth	PH2 8DX
11486	Rannoch Smoked Duck Pate	Castle MacLellan	03.05.05 04.05.05	Tesco	Edinburgh Road	Perth	PH2 8DX
11487	Fresh Welsh Pigs Liver	None declared	18.06.05	R. T. Perkins	Central Market	Cardiff	CF1 2AV
11488	Lunch Tongue	John Cumming Butcher	03.05.05	J Cummings (Butcher)	31 Perth Street	Scone	PH2 6JL
11489	Haggis - slicing	None declared	03.05.05	J Cummings (Butcher)	31 Perth Street	Scone	PH2 6JL

11490	Liver, Bacon & Mash	Tesco	03.05.05	Tesco	Edinburgh Road	Perth	PH2 8DX
11491	Haggis Olives	H W Irvine	03.05.05	H W Irvine	17 - 19 Perth Street	Blairgowrie	PH10 6DQ
11492	Black Pudding	None declared	03.05.05	H W Irvine	17 - 19 Perth Street	Blairgowrie	PH10 6DQ
11493	Pig Liver	None declared	03.05.05	H W Irvine	17 - 19 Perth Street	Blairgowrie	PH10 6DQ
11494	Lamb Liver	None declared	03.05.05	H W Irvine	17 - 19 Perth Street	Blairgowrie	PH10 6DQ
11495	Haggis	None declared	03.05.05	H W Irvine	17 - 19 Perth Street	Blairgowrie	PH10 6DQ
11496	Hand-Made Traditional Haggis	MacSween of Edinburgh	03.05.05	Tesco	High Street	Blairgowrie	PH10 6ET
11497	Tripe	None declared	03.05.05	D & A Kennedy	36 High Street	Blairgowrie	PH10 6ET
11498	Ox Tongue - Cooked	None declared	03.05.05	D & A Kennedy	36 High Street	Blairgowrie	PH10 6ET
11499	Haggis	None declared	03.05.05	D & A Kennedy	36 High Street	Blairgowrie	PH10 6ET
11500	Liver & Bacon Spreading Pate	Tesco Value	04.05.05	Tesco	Edinburgh Road	Perth	PH2 8DX
11501	Sliced Lamb Liver with Onions	Farmfoods	04.05.05	Farmfoods	52/ 60 South Street	Perth	PH2 8PA
11502	Tripe	None declared	04.05.05	Quality Fare	43 South Methven Street	Perth	PH1 2DL
11503	Chicken Liver	None declared	04.05.05	D G Lindsay & Son	15 North Methven Street	Perth	PH1 5PN
11504	Lamb Heart	None declared	04.05.05	D G Lindsay & Son	15 North Methven Street	Perth	PH1 5PN
11505	Lamb's Heart	Glenfernate Fresh Meat	10.05.05	Glenfernate Fresh Meat	Glenfernate	Enochdhu	PH10 7PL
11506	Venison Liver	Glenfernate Fresh Meat	10.05.05	Glenfernate Fresh Meat	Glenfernate	Enochdhu	PH10 7PL
11507	Spicy Basque Pate	Gastronomie Basque	10.05.05	Menzies of Dunkeld	1 Atholl Street	Dunkeld	PH8 0AR
11508	Ox Liver	Glenfernate Fresh Meat	10.05.05	Glenfernate Fresh Meat	Glenfernate	Enochdhu	PH8 0AR
11509	Lamb's Liver	Glenfernate Fresh Meat	10.05.05	Glenfernate Fresh Meat	Glenfernate	Enochdhu	PH10 7PL
11510	Ox Liver	None declared	18.06.05	R. T. Perkins	Central Market	Cardiff	CF1 2AV
11511	Brussels Pate	None declared	10.05.05	Dunkeld Butchers	8 Bridge Street	Dunkeld	PH8 OAH
11512	Lamb kidneys	Glenfernate Fresh Meat	10.05.05	Glenfernate Fresh Meat	Glenfernate	Enochdhu	PH10 7PL
11513	Ox Kidneys	Glenfernate Fresh Meat	10.05.05	Glenfernate Fresh Meat	Glenfernate	Enochdhu	PH10 7PL
11514	Haggis Neeps & Tatties	McIntosh	04.05.05	Tesco	Edinburgh Road	Perth	PH2 8DX
11515	Diced Ox Kidney	None declared	18.04.05	K & E J Crump & Son	120 High Street	Wootton Bassett	SN4 7AU
11516	Lunch Tongue	Princes	18.04.05	Budgens	Boroughfields Shopping Centre	Wootton Bassett	SN4 7AX
11517	Medium Coarse	Iceland	18.04.05	Iceland	121 - 123 High	Wootton Bassett	SN4 7AU

		Ardennes Pate			Street		
11518	Brussels Pate	Heritage	18.04.05	Costcutter	38D Gainsborough Avenue	Wootton Bassett	SN4 8LA
11519	Pig's Kidneys	Somerfield	18.04.05	Somerfield	144 High Street	Wootton Bassett	SN4 7AB
11520	Sliced Pigs Liver	None declared	18.04.05	Andrew Hiscock Butchers	7 The Parade	Pavenhill	SN5 9BX
11521	Calf Liver	Andrews	19.04.05	Andrews Quality Meats	16 High Street	Highworth	SN6 7AG
11522	Roe Venison Liver	Andrews	19.04.05	Andrews Quality Meats	16 High Street	Highworth	SN6 7AG
11523	Sliced Pigs Liver	None declared	19.04.05	S & S Guy Family Butchers	Market Street	Swindon	SN1 1RZ
11524	Ox Tripe	None declared	19.04.05	Mike McGuire Butchers	26 Havelock Street	Swindon	SN1 1SD
11525	Lambs Hearts	None declared	19.04.05	Mike McGuire Butchers	26 Havelock Street	Swindon	SN1 1SD
	Ox Tongue						
11526	(cured ox tongue in jelly - display)	Co-op	19.04.05	Co-op	High Street	Swindon	SN1 3EG
11527	Lamb Liver	Sainsbury's	19.04.05	Sainsbury's	Brunel Plaza	Swindon	SN1 1LF
11528	Chicken Liver Pate	Marks & Spencer	19.04.05	Marks & Spencer	81 Regent Street	Swindon	SN1 1JY
11529	Chicken Livers	Tesco	19.04.05	Tesco	Ocotal Way	Swindon	SN1 2EH
11530	Fresh Lambs Liver	Tesco	19.04.05	Tesco	Ocotal Way	Swindon	SN1 2EH
11531	Lamb Liver	Asda	19.04.05	Asda	Orbital Shopping Park	Swindon	SN25 4BG
11532	Chicken Liver	None declared	24.06.05	Pure Meat Co.	258 Kentish Town Road	London	NW5 2AA
11533	Lamb Kidney	None declared	20.04.05	Jesse Smith	14 Blackjack Street	Cirencester	GL7 2AA
11534	Rare Breeds Pig Liver	None declared	20.04.05	Butts Farm Shop	South Cerney	Cirencester	GL7 5QE